This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

4

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,715	06/23/2003	Vinod Sharma	2207/861502	5754

23838 7590 06/28/2004

KENYON & KENYON
1500 K STREET, N.W., SUITE 700
WASHINGTON, DC 20005

EXAMINER	
ELMORE, STEPHEN C	
ART UNIT	**PAPER NUMBER**
2186	

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,715	SHARMA, VINOD	
	Examiner	Art Unit	
	Stephen Elmore	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *38-44* is/are allowed.

6)☒ Claim(s) *26-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-25 were canceled and new claims 26-44 were added by the preliminary amendment filed June 23, 2003.

2. Claims 26-44 remain for examination.

Specification

3. The disclosure is objected to because of the following informalities:

a. the current status of the parent application already being referenced in the first sentence of the specification needs to be updated to identify the US patent number.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 34-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The

claims are indefinite because:

a. claim 34 recites the limitation "a second array to store data coupled to the first array" in which the scope of this limitation is indefinite because, while the second array can be structurally or functionally coupled to the first array, nevertheless, the limitation does not actually say this, but appears to state, that the data stored in the second array is coupled to the first array, and this functional relationship is nonsensical since "coupling" is interpreted as a

structural term, and so, "data" stored in an array cannot be coupled to anything, therefore, this limitation is unclear in scope of meaning;

b. claim 36 recites the limitation "the array" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim;

c. claims 35-37 inherits the deficiency of the previous claim in the claim dependency chain.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 26-37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,591,341. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claims 1-5, 6-8 and 9-12 of US Patent No. 6,591,341 contain every element of claims 26-33, 31-33 and 34-37, of the instant application, and as such anticipate(s) claims 26-33, 31-33 and 34-37 of the instant application.

"A latter patent claim is not patentably distinct from an earlier patent claim if the latter claim is obvious over, or **anticipated by**, the earlier claim. *In re Longi*, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obvious-type double patenting because the claims at issue were obvious over claims in four prior art patents); *In re Berg*, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obvious-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

More specifically, in comparing the sets of claims, in the exemplary case there exists only two claim language differences between the following claims where the differences are highlighted in brackets:

in Claim 26 of the present application:

26. An [apparatus] comprising:

a first data array;

a second data array coupled to the first data array;

and a merged tag array coupled to the second data array,

wherein the merged tag array is [to store] directory information for the first data array and the second data array.

compared to,

while in Claim 1 of the patent 6,591,341:

1. A [multilevel cache system] comprising:

a first data array;

a second data array coupled to the first data array;

and a merged tag array coupled to the second data array,

wherein the merged tag array is [configured to contain] directory information for the first data array and the second data array.

The first difference, in line 1, is that the first claim (26) is directed towards an apparatus, while the second claim (1) is directed towards a multilevel cache system. A multilevel cache system is a species of the apparatus genus. Our case law firmly establishes that a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim. *In re Berg*, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 1053, 29 USPQ2d 2010, 2016(Fed. Cir. 1993); *In re Gosteli*, 872 F.2d 1008, 1010, 10 USPQ2d 1614, 1616(Fed. Cir. 1989); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782, 227 USPQ 773, 779 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d at 944, 214 USPQ at 767 (C.C.P.A. 1982)." ELI LILLY AND COMPANY v BARB LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

The second difference, in line 5, is an obvious difference in claim language because an apparatus containing a merged tag array which stores directory information is an obvious variation of a

multilevel cache system containing a merged array configured to contain directory information. The languages of the two claims are not patentably distinct. Further, dependent claims 27-30 of the present application correspond to dependent claims 2-5 of US Patent 6,591,341 by the same rationale.

Likewise, claim group 31-33 of the present application corresponds to the claim group 6-8 of US Patent 6,591,341 and anticipates claims 6-8 of US Patent 6,591,341 by the rationale that a merged tag array having a plurality of entries species anticipates a merged tag array genus of claim 31 of the instant application. And, dependent claims 32-33 correspond to dependent claims of US Patent 6,591,341 by the same rationale.

Additionally, claim group 34-37 of the present application corresponds to the claim group 9-12 of US Patent 6,591,341 and anticipates claims 9-12 of US Patent 6,591,341 by the rationale that a multilevel cache system species anticipates a system genus of claim 34 of the instant application, and giving the claim the best interpretation possible, considering the 112, second paragraph problem mentioned above, that is, in claim 34 is interpreted that the second array stores data and is coupled to the first array, where it is considered an obvious variation in claim 34 over claim 9 of US Patent 6,591,341, for first and second arrays to be coupled with each other as an obvious variation of first and second arrays of claim 9 of US Patent 6,591,341, and lastly, dependent claims 35-37 anticipates the dependent claims 10-12 of US Patent 6,591,341 by that rationale.

Allowable Subject Matter

8. Claims 38-44 are allowable over the prior art of record because:

In independent claim 38, the features "issuing a request for information to a first data array, a second data array, and a merged tag array, wherein the merged tag array stores directory

information for the first data array and the second data array" and "determining form the merged tag array whether the request generated a cache hit in the first data array or second data array" taken in combination with the remaining claim limitations and such limitations taken as a whole are not found in and or are not obvious in view of the prior art of record.

In independent claim 42, the features "a merged tag array coupled to the central processing unit and the second data array, wherein the merged tag array is to store directory information for the first data array and the second data array" and "a system random access memory coupled to the merged tag array and the second data array" taken in combination with the remaining claim limitations and such limitations taken as a whole are not found in and or are not obvious in view of the prior art of record.

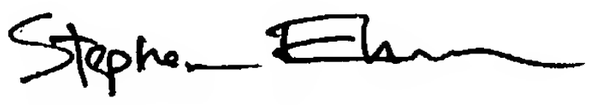
9. Claims 26-37 contain patentable subject matter.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Elmore whose telephone number is (703) 308-6256. The examiner can normally be reached on Mon-Fri from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stephen Elmore
Patent Examiner
Art Unit 2186

June 23, 2004